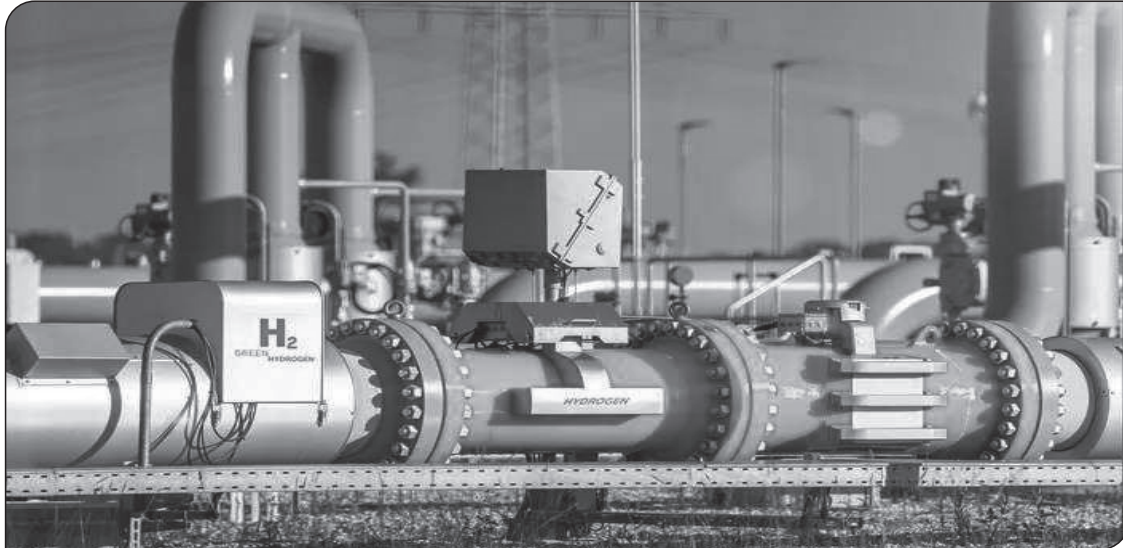


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INDIA'S QUEST FOR HYDROGEN ENERGY CLASHES WITH WATER SCARCITY FEARS

Surbhi, Exprolration
Narayanposhi Iron & Mn Mines, M/s JSW Steel Ltd.



In a significant development at the COP28 climate summit, a new report has highlighted a looming water crisis for India's hydrogen energy sector. According to the analysis by the International Renewable Energy Agency (IRENA) and Bluerisk, 99% of India's existing and planned green and blue hydrogen capacities face extreme water stress conditions by 2040.

The report, titled "Water for Hydrogen Production, underscores the water efficiency of green hydrogen, produced from renewable sources, as opposed to blue hydrogen made from natural gas with carbon capture and storage (CCS). It points out that green hydrogen, despite being the most water-intensive in its category, still uses nearly one third less water per kilogram of hydrogen produced than blue hydrogen.

"Our analysis sheds light on an overlooked aspect of hydrogen's role in the energy transition the water impact of clean hydrogen production.", some hydrogen production methods increase the risk of water stress, advocating for green hydrogen as a solution for achieving climate targets.

The global hydrogen industry's water demand is expected to more than triple by 2040 and increase six-fold by 2050, posing significant challenges, particularly for water-stressed regions like India. "Carbon capture and storage systems can cause hydrogen production's water demand to skyrocket.

The report also finds that over 80% of China's hydrogen production from coal occurs in the water-stressed Yellow River Basin, and a significant portion of Europe's hydrogen projects are likely to face high water stress by 2040. These global insights reflect a growing need for sustainable water management in hydrogen production.

For India, the report's findings call for integrating water considerations into hydrogen planning and project approval. This is critical given that more than a third of current and planned green and blue hydrogen projects globally are already in highly water-stressed regions.

The advancements in green hydrogen production technologies, such as air cooling and improved electrolysis efficiency, could further reduce water dependency. This is a crucial consideration for India, where adopting such technologies could significantly mitigate the water stress challenges associated with its hydrogen energy initiatives.
